

R E M A R K S

I. INTRODUCTION

In response to the Office Action Applicants have amended the title to be more clearly indicative of the invention to which the claims are directed. Applicants have also amended claim 44, to recite a limitation whereby the elemental symbol width of each of the media data streams is equal to or narrower than the data path. Applicants respectfully submit that, based on the reasons that follow, amended claim 44, along with claims 45-52 dependent therefrom, are patentable over United States Patent No. 4,975,868 Freerksen ("the '868 patent").

II. THE PRESENT INVENTION IS PATENTABLE OVER THE '868 PATENT BECAUSE THE '868 PATENT LACKS ANY DISCLOSURE OR SUGGESTION OF THE DYNAMIC PARTITIONING AND PARALLEL PROCESSING OF A PLURALITY OF DATA STREAMS, THE WIDTH OF EACH DATA STREAM BEING EQUAL TO OR NARROWER THAN THE DATA PATH, AS RECITED IN INDEPENDENT CLAIM 44

The Office Action rejects claims 44-52 under 35 U.S.C. § 103(a) as being unpatentable over the '868 patent.

Claim 44 claims a system for unified media processing that includes a plurality of general purpose media processors. Each of the general purpose media processors has a dynamically partitioned execution unit, wherein a plurality of media data streams are concurrently transmitted over a single data path and are dynamically partitioned according to an elemental symbol

width that is equal to or narrower than the data path. The data path of each media processor of claim 44 is dynamically partitioned for simultaneous parallel processing of each of the plurality of media data streams. The present invention thereby performs parallel, multiple precision operations on a plurality of data streams, each of a width up to that of the data path.

The '868 patent discloses a floating point arithmetic unit that includes bias adjustment logic for eliminating extra processing steps when multiplying or dividing operands with biased exponents. The '868 patent describes a processing system intended as the environment in which the invention operates. The processing system includes a main processor that controls the execution of an arithmetic instruction (the fetching of the operands required for executing the instruction and the storage of the result), and a floating point coprocessor for performing the actual computations. The '868 patent teaches data formatting logic that adjusts the bias of biased exponents, prior to the coprocessor's execution of a multiplication or division operation, to eliminate an extra processing step for adjusting the exponent bias of the result. The floating point coprocessor sequentially performs the multiplication or division operations utilizing the adjusted exponents. The '868 patent lacks any disclosure or teaching of the dynamic partitioning of a plurality of data streams concurrently transmitted over a single data path for parallel processing, as presently claimed.

The Office Action further asserts that,

it would have been obvious to one of ordinary skill in the art at the time of invention to modify Freerkens's system such that the media processors are operated at substantially peak rate during the system operation because it would have allowed the system to process the media information at much higher rate based on the requirements, thereby increasing the overall media information processing rate of the system and hence increase the overall performance of the system.

(Office Action, ¶ 22). Applicants respectfully traverse this assertion because the "sustained peak data rates" of the presently claimed media processor is achieved by the dynamic partitioning and parallel processing of the plurality of data streams concurrently transmitted over the data path. The processor operates at peak rates by performing parallel processing of multiple data streams utilizing the entire width of the data path. The '868 patent, however, simply provides an exponent unit that adjusts the bias of biased exponents for serial processing by a floating point processor. The processing system of the '868 patent simply performs sequential execution of floating point operations. The '868 patent does not provide an architecture that maximizes the full bandwidth of the data path by dynamically partitioning the data path for parallel processing, and therefore lacks any teaching or suggestion of an architecture capable of operating at "sustained peak data rates," as presently claimed. Accordingly, Applicants submit that the presently claimed architecture would not have been obvious to one

of ordinary skill in the art at the time of invention in view of the '868 processing system.

Therefore, Applicants submit that claim 44 is patentable over the '868 patent. Additionally, Applicants submit that claims 45-52, being dependent from patentable base claim 44, are also patentable over the '868 patent.

Accordingly, Applicants respectfully request that the § 103(a) rejection of claims 44-52 be withdrawn.

III. CONCLUSION

Having completely responded to the Office Action, Applicants submit that all pending claims are in condition for allowance, an indication for which is respectfully solicited..

Respectfully submitted,

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